



United States Department of Agriculture



BEYOND THE SPARK

THOUGHTS FROM FOREST ASSISTANT FIRE MANAGEMENT OFFICER MATT HOLMSTROM

I encourage you to help design the *Six Rivers Hazardous Fuels and Fire Management Project—Fire & Fuels Project* for short. The project is envisioned to use fire as a tool to manage vegetative fuels known to contribute to active crown fire behavior, targeting shrub fields, woodlands and small trees with stems less than 12 inches diameter. I could not be more pleased to be at the table for this venture, in the spirit of cooperation, to look back on wildfire case studies and review common denominators in the chain of events leading up to unintended outcomes — on families, cultures and nature. Side by side with partners and collaborators, we can apply this information to make an increasingly positive impact as land stewards.

The journey that lies ahead for us all is to devise a cohesive forest-scale approach to fire management based on the benefit of hindsight and our collective knowledge. On numerous fatality fires, there are precursors, moments when something happened that was wrong, felt wrong, or was a downright near miss. Whether a fire that is unusually resistant to control, or a vehicle almost getting burned up, a strange set of burning conditions or a rapid change in the color of the smoke, afterwards people often remark on the strangeness of the day. We have intrinsic knowledge that we routinely ignore, and at our peril. I believe that applying this knowledge starts with inclusive mindful listening. As long as it gets us talking and thinking, I would call that a success.

FIRE TRENDS ON US FOREST LANDS (1910-2008)

Fire Size

In the 2000s, mean and maximum fire size and total area burned per year of fires >100 acres were the highest they had been since 1910, although the total number of fires was still less than in the 1920s.

Fire Severity

The proportion of a fire footprint that burned at high severity ranged from 9% to 18% depending on vegetation. In conifer forests, areas with smaller trees had a high proportions of high severity fire behavior—a reason that this project focuses on small trees.

Fire Entrapments

On fires that cut off firefighters' escape routes, the average time between sudden fire "blow up" and the entrapment was just 24 minutes during the hottest part of the day (2-5 pm). Fuels treatments can buy time and space to escape.

Fatalities

More than 20% of fatalities in wildland firefighting operations occurred in areas that had burned at high severity previously. Planning when and where to burn can limit fire severity.

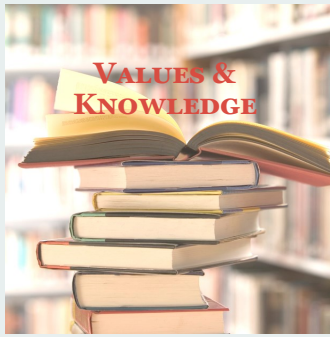


Forest
Service

Pacific Southwest
Region

Six Rivers
National Forest

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Defining Reference Values

Each person holds certain *values* in high regard, based on cultural and personal experience and education.

The goal of the scoping process is the for the public to scrutinize federal land management proposals before a federal decision is made so that the decision can incorporate and support public interests. The comments on proposed projects reveal values stemming from cultural diversity, and at times, highlight profoundly differing public views and attitudes concerning conservation and what is considered acceptable risk.

During the scoping period, the first step is to compile reference values and objectives. *Values*—what is important—are translated into *objectives*—real environmental conditions consistent with those values—to inform project design, management methods, thresholds for unavoidable negative impacts deemed socially acceptable, and monitoring priorities.

An initial list of values and objectives gleaned from government land management plans and studies, comments shared in prior planning efforts, and local management plans is displayed on the insert pages. Your written comments and those expressed during public engagements will be added to this preliminary list. Once the full list is compiled, we will transition to the design stage of condition-based management planning (page 3).

What have we missed? Please let us know.

PLANNING FOR CONDITION-BASED MANAGEMENT

Six Rivers National Forest leadership is working to manage fire to promote conservation at the landscape scale, while incorporating diverse community interests and the range of known outcomes (intended and unintended) associated with fire management practices. For this reason, we have chosen to apply condition-based management (CBM): identifying the desired conditions for different parts of the landscape and understanding how different fire management practices will move toward or away from those conditions.

The CBM process begins by answering the question: “Where and how should fire be applied to establish and maintain desired vegetative patterns and structures?” To identify those conditions and parameters, the planning process for the *Fire & Fuels Project* depends on graphic design and, most importantly, public participation.

Unlike fuelbreak and commercial thinning projects, which focus on removing overstory trees, the *Fire & Fuels Project* focuses on using fire to

manage the forest floor and understory vegetation. Pre-treatments of overstory trees, listed in our toolbox (page 3), would be implemented only when necessary to facilitate safe and ecologically effective burning.

The CBM design stage involves listening to community members’ diverse values and compiling them into maps, graphics, and ultimately, frameworks to guide management.

The design stage is neither strictly a technical process nor merely an artistic exercise. It is a creative, spatial approach that is subject to analytical tests. The goal is to merge what humans desire the land to be, given our aesthetic, eco-cultural and substance values and acknowledging some level of risk and uncertainty, and what the land “wants to be” given its own self-organizing capabilities and tendencies. The planning process will analyze and include both the overall ecology of the land and its human dimensions.

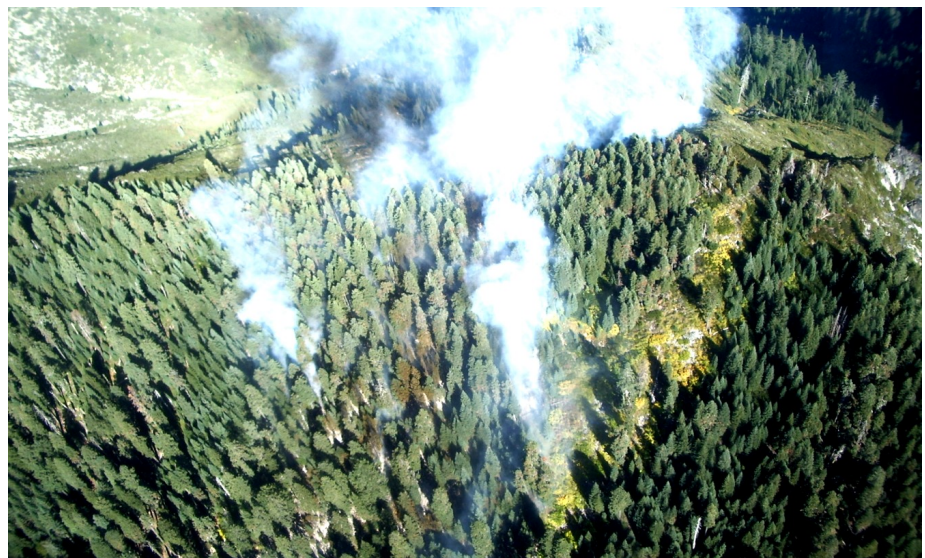


Photo above: Fire can improve ecological conditions. In 2006, lightning ignited the Jacket Fire, located approximately eight miles northeast of Somes Bar in the Marble Mountain Wilderness. The ¼-acre fire, burning in heavy true fir near Medicine Mountain, was considered a good candidate for wildfire use, recognizing that biodiversity correlates to diversity of vegetative patterns and that letting the fire burn would enhance diversity in this densely forested area.



Photo above: Our actions, livelihoods, and cultures have consequences for our environment. These can be detrimental, but also positive or surprising, as where the compacted surface of this unauthorized route located near Coon Creek on the Smith River National Recreation Area (Gasquet Ranger District), caused puddling, which in turn created ideal habitat for native *Darlingtonia* (pitcher plants) to thrive and reproduce.

A TWO-PART PLANNING PROCESS

The CBM process starts with the design stage to understand the values of people who use the land and their broad objectives for promoting those values on the forest. In the analysis stage, these objectives are refined through technical reviews and analysis into criteria that will ultimately guide our burning prescriptions.

Design Stage:

Identify values and objectives and map them broadly on the landscape.

Identify and map ecologically sustainable vegetative types and conditions in line with those values.

Analyze opportunities and constraints for fire use, both physical (e.g. topographic) and ecological or cultural (e.g. Indigenous fire management for specific places and values).

Identify processes of movement and change across the landscape, such as vehicle traffic, sediments flows, animal migrations, and insect invasions. Evaluate how these processes interact with vegetative patterns, and their influence on how fire can be safely applied.

Analysis Stage:

Prepare maps to show the values and objectives being considered; refine based on new understanding and dialogue.

Identify ranges of possible weather conditions (50th-97th percentile) under which fire might burn in different *firesheds*—geographic areas akin to watersheds, with similar topographic and vegetation conditions—across the forest.

Use a computer model to predict how fire will behave in the firesheds under a range of weather conditions from the most extreme (97th percentile) to moderate. Predict the probability of crown fire and the forest canopy cover change for each fireshed and set of conditions.

Determine acceptable thresholds for change in different firesheds, based on model outputs and identified values.

Overlay mapped values with acceptable thresholds for change. Break firesheds down into the smallest feasible units and identify which tools should be used, under what conditions, in each unit. Exclude units where no change is acceptable or the available tools cannot accomplish the desired outcomes.



The Fire & Fuels Project would authorize a set of manual and mechanical land management tools to prepare our landscapes for up to 8,000 acres of prescribed burning every year.

Once collective values and objectives for fire behavior are translated as a graphic design, the Forest Service will continue to collaborate and engage the public to develop an action plan and sequence for where, when, and which of the following management tools should be implemented:

- Mastication, chipping & machine piling along existing roads (no new road construction allowed)
- Thinning understory vegetation, including trees with stems up to 12 inches diameter
- Pruning
- Hand piling
- Pile burning
- Broadcast/jackpot burning
- Lop and scatter
- Fireline construction
- Understory burning
- Prescribed fire ignition
- Fuels maintenance (allows for repeated use of tools listed above)



PROJECT TIMELINE

Dec 20, 2019 – Feb 18, 2020

- Initiate public engagement
- **Public meetings:**
 - Jan 15, 5-7 pm, Six Rivers National Forest Supervisor's Office, 1330 Bayshore Way, Eureka
 - Jan 23, 10 am-12, Gasquet Ranger District Office, 10600 Hwy 199
 - Additional meetings TBD—*contact Carol Spinos to schedule*
- Define reference values and objectives

Feb – March 2020

- Develop project design elements

April–May 2020

- Develop action plan and monitoring strategy

June 2020

- Federal decision

Photo at right: We take fire seriously and learn from the past. Firefighters involved in the Little Venus Entrapment site in 2006 revisited the site as part of a facilitated learning analysis (FLA) to hear how their understanding of the situation affected their choices at the time. Very often, normal and honest people involved in a traumatic event remember things that never actually happened and cannot recall key events that they were directly involved with. In a facilitated dialogue session, participants and witnesses all share their contrasting memories together with other information gathered by the FLA Team. They meet with focus groups that include both the community of practice inside of the agency and outside professionals who have a fresh perspective and may be better positioned to see things that insiders miss.

LEARNING LESSONS

It is impossible to predict all the potential situations that will arise in complex systems. Fire behavior is a complex function of weather, topography, and vegetative fuels. It falls to us to make sense of emerging conditions, and adapt solutions to fit the situation. During the CBM process, we will examine how past fires interacted with vegetation communities, distilling those fire patterns into summaries known as fire regimes and fire return intervals. Management based on this information will be revised as we learn more.

“Errors are not desirable, of course, but everyone understands that they are unavoidable. [...] In the final analysis, the test of a nation’s character, and of an individual’s integrity, does not depend on being error free. It depends on what we do after making the error.” Carol Tavis and Elliot Aronson, *Mistakes Were Made (but not by me): Why We Justify Foolish Beliefs, Bad Decisions, and Hurtful Acts*.

When mistakes are made, we may discover “hard truths.” To learn, we must all be prepared to challenge our assumptions and welcome hard truths as an opportunity to learn. An intriguing part of the CBM process will be illuminating the disparity between how much risk we are willing to take to fulfill our values and objectives — compared to how much risk is required to achieve them. The *Fire and Fuels* project will include ongoing monitoring and opportunities for input to inform future decisions.

To schedule a time to discuss this proposal, or to coordinate informal workshops or meetings to collectively share ideas, contact Carol Spinos, team lead, at (707) 441-3561 or carol.spinos@usda.gov

